STATE OF ILLINOIS
POLLUTION CONTROL BOARD
SEPTEMBER 14, 1976

OLIN CORPORATION, a Virginia Corporation,	)	
Petitioner,	)	
vs.	)	PCB No. 76-213
THE STATE OF ILLINOIS, ENVIRONMENTAL PROTECTION AGENCY,	)	EPA 3931
Respondent	)	

PETITION FOR VARIANCE

Comes now OLIN CORPORATION, a Virginia corporation duly authorized to do business in the State of Illinois, through its attorney, and hereby petitions for a variance from Air Pollution Control Regulations:

104, Compliance Programs and Project Completion Schedules;

203(e), Particulate Emission Standards and Limitations for Incinerators; and

206(b), Carbon Monoxide Emission Standards and Limitations, Incinerators, based upon the following facts.

1. Petitioner operates industrial facilities leased from the U. S. Government in the former U. S. Army Ordnance Plant near the City of Marion, Williamson County, Illinois. Various propellant and pyrotechnic devices are manufactured at this location for the U. S. Department of Defense and for export to foreign governments.

2. Contracts for such items are let by the Government annually on competitive bid. Under these circumstances it is impossible to state with certainty what Petitioner's product line will be. However, the maximum amount of explosive refuse to be generated per week can be estimated as follows:

Ammonium Nitrate Propellant	500 lbs.
Double Base Propellant	300 lbs.
RDX Type Explosive	200 lbs.
Single Base Propellant	20 lbs.
Ammonium Perchlorate Propellant	20 lbs.
Boron-Potassium Nitrate Propellant	200 lbs.
Black Powder	10 lbs.
Nitroglycerine in Sawdust	25 lbs.
Potassium Perchlorate Propellant	20 lbs.
Firecracker Mix	50 lbs.
Colored Smoke Mix	100 lbs.
Contaminated Packaging	200 lbs.
Pyrotechnic Flare Scrap	50 lbs.
Fuzes, primers and explosive projectiles of intermediate caliber ammunition	1,000 lbs.

Activities such as machine cleaning, floor sweeping and rejected product create these estimated amounts of explosive refuse.

3. An incinerator to dispose of explosive refuse has been designed and constructed by Petitioner on approximately 290 acres of strip mine spoil lands near Marion in Williamson County. Exhibit "A" attached hereto and made a part hereof is the Construction Permit Application for the incinerator which was filed with the Environmental Protection Agency on January 21, 1974. Contaminants discharged by the incinerator and the air pollution control device used are described in Exhibit "A".

Certain errors in the original test data concerning emissions have been

discovered and corrected in a report of Howard E. Hesketh, P.E., dated September 17, 1975 and attached to Exhibit "A".

4. A retort for disposal of fuses, primers and explosive projectiles from intermediate caliber ammunition has also been constructed on the site. Both the retort and the incinerator use the same air pollution control device.

Exhibit "B" attached hereto and made a part hereof is a Construction Permit Application describing the retort, emissions from its operation and the air pollution control devices used. This retort was actually constructed as an experimental incinerator under open burning application No. B 305029 issued by the Agency.

5. Air pollution from use of the incinerator of Exhibit "A" and the retort of Exhibit "B" is small. However, existing incinerator emission standards are based upon the technology for burning municipal type solid waste. Municipal waste requires little excess air and contains enough carbon to generate carbon dioxide when burned in an incinerator. Thus, regulation 203(e) requires a particulate emission standard based upon a correction to 12% carbon dioxide, and rule 206(b) requires a carbon monoxide standard corrected to 50% excess air. Unfortunately, explosive incineration requires a large amount of excess air and generates little or no carbon dioxide. As a result the correction factors required for municipal incinerators work a severe penalty on incinerators burning explosives. Attached hereto as Exhibit "C" and made a part hereof is a Petition to Amend Regulations which Petitioner is presently circulating for the necessary 200 signatures. This

proposed change addresses the problem of accurately measuring contaminants from incinerators burning explosives.

Actual quantities of contaminants released are computed to be:

Particulates:

Incinerator (Exhibit "A")	2.3 lbs. per hour
Retort (Exhibit "B")	2.9 lbs. per hour

Carbon Monoxide:

Incinerator (Exhibit "A")	19.6 lbs. per hour
Retort (Exhibit "B")	3.6 lbs. per hour.

A changing rate of 400 lbs. per hour for the incinerator and 500 lbs. per hour for the retort are used in calculating these emissions. Maximum operating time per week is 20 hours for the incinerator and 2 hours for the retort. They are not operated simultaneously.

6. Incineration of explosive refuse represents an advance in the state of the art. Open burning is still the commonly accepted safe disposal practice. Petitioner has no plan to bring its incinerators into compliance with existing emission standards, but seeks a Board hearing on proper emission standards for incinerators burning explosive waste.

7. The Board has determined several times in the past that imposition of existing air pollution control regulations on the disposal of explosive wastes would constitute an arbitrary and unreasonable hardship. Petitioner's prior variances for this problem are:

VR 67-60 of the Illinois Air Pollution Control Board,
PCB 71-60,

PCB 71-371,

PCB 72-357,

PCB 72-517,

PCB 73-395,

PCB 74-335, and

PCB 75-333.

Open hearings have been held at East St. Louis under VR67-60, and at Marion under PCB 71-60 and PCB 73-395.

These prior variances have established that open burning is the accepted safe practice for explosive disposal. Petitioner's incineration method significantly reduces air pollution when compared with open burning, and no alternate safe means of disposal are known.

8. Primary air quality standards for particulates are 75 micrograms per cubic meter (annual geometric mean) and 260 micrograms per cubic meter (maximum 24 hour concentration), 40 C.F.R. 50.6. Marion, Illinois is listed on page 117 of the Illinois Air Quality Report, 1975, as having 46 micrograms per cubic meter (annual geometric mean) and less than 150 micrograms per cubic meter (highest sample reading).

Petitioner's incinerator is calculated to generate up to 2.3 lbs. of particulate per hour for a maximum of 20 hours per week. The retort will generate up to 2.9 lbs. of particulates per hour for a maximum of 2 hours per week. These devices do not operate simultaneously. Such low levels of particulate generation will cause no harm to the public and will not pre-

vent the attainment of national ambient air quality standards in the surrounding area.

9. Carbon monoxide emissions under this variance can reach a maximum of 19.6 lbs. per hour for 20 hours a week during operation of the incinerator (Exhibit "A"). Dispersion estimates have been made in accordance with Public Health Service Publication No. 999-AP-26. Maximum carbon monoxide concentration resulting from this variance under worst climatic conditions with a 5 mph wind will occur approximately 0.3 mile from the stack. Concentration at this distance would be 0.82 ppm. National ambient air quality standards permit an 8 hour concentration of 9.00 ppm and a 1-hour concentration of 35.00 ppm. No residences are located within 0.3 mile from the stack.

The Illinois Air Quality Report, 1975, states that motor vehicles are the major source of carbon monoxide, and no data was collected for carbon monoxide in Rural Air Quality Control Region 74 which contains Marion, Illinois.

Petitioner estimates that this variance would generate approximately the same amount of carbon monoxide on an annual basis as one family automobile. No harm to the public can be caused by such a level of emissions, and the area will be able to meet national ambient air quality standards.

WHEREFORE, Petitioner seeks a variance for five years from the requirements of Air Pollution Regulations:

(1) 104, which requires a compliance program and project completion

schedule as a condition to obtaining operating permits for Petitioner's incinerator and retort;

(2) 203(e), which imposes particulate emission standards that explosive burning incinerators are unable to meet; and

(3) 206(b), which imposes carbon monoxide emission standards that explosive burning incinerators are unable to meet.

Respectfully submitted,

Patrick O. Boyle

Patrick O. Boyle
Attorney at Law

STATE OF ILLINOIS)
) SS
COUNTY OF WILLLIAMSON)

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

OLIN CORPORATION, a Virginia Corporation,	)	
Petitioner,	)	
vs.	)	PCB No._____
THE STATE OF ILLINOIS, ENVIRONMENTAL PROTECTION AGENCY,	)	
Respondent	)	

APPEARANCE

The undersigned as an attorney duly licensed and registered to practice in the State of Illinois hereby enters an Appearance in behalf of Petitioner, Olin Corporation.

OLIN CORPORATION

by Patrick O. Boyle

Patrick O. Boyle
Suite 250
Berkshire Building
707 Berkshire Avenue
East Alton, Illinois 62024
(618) 258-2603

Dated: September 14, 1976

CERTIFICATE OF MAILING

I hereby certify that I did, on September 14, 1976 serve the attached document upon the Environmental Protection Agency by placing in an envelope addressed to the State of Illinois, Environmental Protection Agency, 2200 Churchill Road, Springfield, Illinois 62706, with sufficient postage affixed, certified mail, return receipt requested; said envelope being deposited in the United States mail at East Alton, Illinois on September 14, 1976.

Patrick O. Boyle

Patrick O. Boyle
Attorney at Law

EXHIBIT "A"

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL
2200 CHURCHILL ROAD
SPRINGFIELD, ILLINOIS 62706

RICHARD B. OGILVIE, GOVERNOR
WILLIAM L. BLAZER, DIRECTOR

OPERATING PERMIT APPLICATION
FOR EXISTING INCINERATOR*

FOR OFFICIAL USE ONLY
I.D. NO.
PERMIT NO. O
I
DATE

1a. NAME OF OWNER: Olin Corporation	1b. NAME OF OPERATOR:
2a. TELEPHONE NUMBER OF OWNER: 618/985-3721	2b. TELEPHONE NUMBER OF OPERATOR:
3a. STREET ADDRESS OF OWNER: P.O. Drawer G	3b. STREET ADDRESS OF OPERATOR:
4a. CITY OF OWNER: Marion,	4b. CITY OF OPERATOR:
5a. STATE OF OWNER: Illinois; 6a. ZIP CODE: 62959	5b. STATE OF OPERATOR: ; 6b. ZIP CODE:
7. NAME OF CORPORATE DIVISION OR PLANT (IF DIFFERENT FROM OWNER):	
8. TELEPHONE NO. OF DIV. OR PLANT	9. LOCATED WITHIN CITY LIMITS: YES NO X; 10. STREET ADDRESS OF EMISSION SOURCE:
11. CITY:	11a. TOWNSHIP: ; 12. COUNTY: ; 13. ZIP CODE:

THE UNDERSIGNED HEREBY MAKES APPLICATION FOR A PERMIT TO OPERATE THE EQUIPMENT DESCRIBED HEREIN AND CERTIFIES THAT THE STATEMENTS CONTAINED HERE ARE TRUE AND CORRECT, AND FURTHER CERTIFIES THAT ALL PREVIOUSLY SUBMITTED INFORMATION REFERENCED IN THIS APPLICATION REMAINS TRUE, CORRECT AND CURRENT.

OWNER (IF INDIVIDUAL)

SIGNATURE _____ DATE _____

YOUR IDENTIFICATION NUMBER (OPTIONAL)

OWNER (IF CORPORATION OR PARTNERSHIP)

Olin Corporation 1-21-74
EXACT CORPORATE OR PARTNERSHIP NAME DATE

BY J. Mclaughlin - Corp. Vice Presic & General Manage
SIGNATURE TITLE
Winchester-Weste Division

OPERATOR MUST SIGN IF DIFFERENT FROM OWNER

OPERATOR (IF INDIVIDUAL)

SIGNATURE _____ DATE _____

OPERATOR (IF CORPORATION OR PARTNERSHIP)

EXACT CORPORATE OR PARTNERSHIP NAME _____ DATE _____

BY _____
SIGNATURE TITLE

* IF AN OWNER OR OPERATOR IS A CORPORATION, IT MUST HAVE ON FILE WITH THE AGENCY A CERTIFIED COPY OF A RESOLUTION OF ITS BOARD OF DIRECTORS AUTHORIZING THE INDIVIDUALS SIGNING THE APPLICATION TO EXECUTE THIS OPERATING PERMIT APPLICATION AND TO CAUSE OR ALLOW THE CONSTRUCTION MODIFICATION AND OPERATION OF THE EQUIPMENT TO BE COVERED ON THE PERMIT.

*THIS APPLICATION FORM SHALL BE USED FOR ONLY INCINERATOR LESS THAN TWO THOUSAND (2000) LB/HR CAPACITY. FOR OTHER INCINERATORS FORM APC-60 PLUS SUITABLE ADDITIONAL FORMS SHALL BE USED.

Exhibit A - 1 page

Form APC-63 plus attachments - 27 pages

FOR OFFICIAL USE ONLY

PERMIT NO. I [ ]

14. WAS THE EQUIPMENT DESCRIBED IN THIS INFORMATION FORM INSTALLED AT THE PLANT OR PREMISES ON OR BEFORE APRIL 14, 1972? ☐ YES ☐ NO

IF NO, STATE WHETHER THE APPLICANT HAD, ON OR BEFORE APRIL 14, 1972, ENTERED INTO A BINDING AGREEMENT OR CONTRACTUAL OBLIGATION TO PURCHASE THE EQUIPMENT DESCRIBED IN THIS INFORMATION FORM. ☒ YES ☐ NO

15. APPLICANT MUST SUBMIT: A PLOT PLAN AND MAP SHOWING DISTANCES TO NEAREST PROPERTY OF THE PROPERTY ON WHICH THE EMISSION SOURCE IS LOCATED AND THE DISTANCES TO NEAREST RESIDENCES, DWELLINGS, NURSING HOMES, HOSPITALS, SCHOOLS, COMMERCIAL, AND MANUFACTURING ESTABLISHMENTS UP TO ONE-HUNDRED (300) FEET.

16. STATE INSTALLATION DATE OF THE INCINERATOR.
HAS THE ENVIRONMENTAL PROTECTION AGENCY OR THE TECHNICAL ASSISTANCE UNIT OF THE AIR POLLUTION CONTROL BOARD ISSUED AN INSTALLATION PERMIT FOR THIS INCINERATOR? ☐ YES ☒ NO. IF "YES", CITE THE INSTALLATION PERMIT NUMBER _____.

a. IS THE DATA AND INFORMATION PREVIOUSLY SUBMITTED TRUE, CORRECT, AND CURRENT? ☒ YES ☐ NO

b. HAVE ALL CONDITIONS OF THE PERMIT BEEN COMPLIED WITH? ☐ YES ☐ NO

c. IF ANSWER TO a OR b IS "NO" EXPLAIN IN DETAIL AND MARK EXPLANATION AS EXHIBIT A. TOTAL NUMBER OF PAGES IN EXHIBIT A: 1

IF THE ANSWERS TO QUESTIONS IN ITEM 16 ARE "YES" AND THE APPLICANT HAS CITED THE APPROPRIATE INSTALLATION OR CONSTRUCTION PERMIT NUMBER, ITEMS 17 THROUGH 26 NEED NOT BE COMPLETED.

17. DESCRIPTION OF SOURCE OF WASTE:

See attachments for balance of information.

FOR AGENCY USE ONLY
DO NOT COMPLETE THIS SECTION

18. MAKE OF INCINERATOR: | MANUFACTURER CODE

19. INCINERATOR MODEL NO: | 20. ☐ FLUE ☐ MULTIPLE CHAMBER ☐ SINGLE CHAMBER | MODEL CODE

21. MAXIMUM AMOUNT OF WASTE TO BE INCINERATED: _____ LB/HR | CAPACITY CODE

22. ESTIMATED DAILY AMOUNT OF WASTE TO BE INCINERATED: _____ LB | PARTICULATE EMISSION FACTOR CODE

23. HEIGHT OF STACK ABOVE GRADE: _____ FT. | CO EMISSION FACTOR CODE

24. HEIGHT OF NEAREST OBSTRUCTION WITHIN 150 FT.: _____ FT. |

25. ☒ YES ☐ NO PRIMARY BURNER USED: MAX. RATING _____ BTU/HR | PRIMARY BURNER CODE

26. ☐ YES ☐ NO SECONDARY BURNER USED: MAX. RATING _____ BTU/HR | SECONDARY BURNER CODE

27. DESCRIPTION OF TYPICAL WASTE (COMPLETE ITEMS 27a THROUGH 27k AND 38 AS APPLICABLE):

27a. PAPER: _____ % BY WT	27b. DRY WOOD: _____ % BY WT	27c. LEATHER, LINOLEUM: _____ % BY WT
27d. RUBBER AND PLASTICS: _____ % BY WT	27e. OILS AND PAINTS: _____ % BY WT	27f. STREET AND FLOOR SWEEPINGS: _____ % BY WT
27g. FATS AND MEAT DRESSING: _____ % BY WT	27h. GLASS AND CERAMICS: _____ % BY WT	27i. METALS: _____ % BY WT
27j. GARBAGE, GRASS, BRANCHES VEGETABLES & FRUITS: _____ % BY WT	27k. OTHER (SPECIFY):	_____ % BY WT

28. AVERAGE OPERATION TIME OF INCINERATOR: _____ HRS/DAY _____ DAYS/WEEK _____ WKS/YEAR

29. PERCENT OF ANNUAL THROUGHPUT: DEC-FEB _____ % MAR-MAY _____ % JUNE-AUG _____ % SEPT-NOV _____ %

GAS SCRUBBERS

30. MAKE AND MODEL:	31. FLOW RATE: _____ GPM	32. CAPACITY: _____ SCFM
33. PRESSURE DROP _____ IN-H_2O	34. PRESSURE AT NOZZLES: _____ PSI	35. COMPOSITION OF SOLUTION:
36. EFFICIENCY (ATTACH SUPPORTING DATA): _____ %	37. DISPOSITION OF WASTE:	

38. NOTE: FOR INDUSTRIAL WASTES, COMPLETE COMPONENT AND/OR CHEMICAL DESCRIPTION INCLUDING SULFUR, CHLORIDE, ASH, AND MOISTURE CONTENT MUST BE GIVEN IN AN ADDENDUM ATTACHED TO THIS APPLICATION.

APC-92 EXHIBIT A

Construction Permit Application #C 3 02 039, I.D. #199 055 AAR was denied by the Illinois Environmental Protection Agency on March 12, 1973. On December 18, 1973, Variance PCB-395 was granted to the Olin Corporation by the Illinois Pollution Control Board. This variance allows operation of the device covered by Application #C 3 02 039 contingent on obtaining an Operating Permit from the agency. The Olin Corporation, by this submission, applies for such an Operating Permit. A copy of original application #C 3 02 039 is attached for reference.

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL
2200 CHURCHILL ROAD
SPRINGFIELD, ILLINOIS 62706

RICHARD B. OGILVIE, GOVER
WILLIAM L. BLAGER, DIREC

CONSTRUCTION PERMIT APPLICATION FOR EMISSION SOURCE

FOR OFFICIAL USE ONLY
I.D. NO.
PERMIT NO.
DATE

1a. NAME OF OWNER: Olin Corporation	1b. NAME OF OPERATOR:
2a. TELEPHONE NUMBER OF OWNER: [illegible]	2b. TELEPHONE NUMBER OF OPERATOR:
3a. STREET ADDRESS OF OWNER: [illegible] Division St	3b. STREET ADDRESS OF OPERATOR:
4a. CITY OF OWNER: [illegible]	4b. CITY OF OPERATOR:
5a. STATE OF OWNER: Illinois / 5b. ZIP CODE: 62959	5a. STATE OF OPERATOR: / 6b. ZIP CODE:
7. NAME OF CORPORATE DIVISION OR PLANT (IF DIFFERENT FROM OWNER):	
8. TELEPHONE NUMBER OF DIV. OR PLANT: / 9. LOCATED WITHIN CITY LIMITS: ☐ YES ☒ NO	10. STREET ADDRESS OF EMISSION SOURCE:
11. CITY: / 11a. TOWNSHIP:	12. COUNTY: / 13. ZIP CODE:

THE UNDERSIGNED HEREBY MAKES APPLICATION FOR A PERMIT TO CONSTRUCT OR MODIFY THE EQUIPMENT DESCRIBED HEREIN AND CERTIFIES THAT THE STATEMENTS CONTAINED HEREIN ARE TRUE AND CORRECT, AND FURTHER CERTIFIES THAT ALL PREVIOUSLY SUBMITTED INFORMATION REFERENCED IN THIS APPLICATION REMAINS TRUE, CORRECT AND CURRENT.

OWNER (if individual)

Signature — Date

Your Identification Number (Optional)

OWNER (if corporation or partnership)

Olin Corporation — 1-21-74
Exact corporate or partnership name — Date

By [signature] — Corp. Vice President & General Manager
Signature — Title
Winchester-Western Division

OPERATOR (if individual)

Signature — Date

OPERATOR (if corporation or partnership)

By
Exact corporate or partnership name — Date

Signature — Title

IF AN OWNER OR OPERATOR IS A CORPORATION, IT MUST HAVE ON FILE WITH THE AGENCY, A CERTIFIED COPY OF A RESOLUTION OF ITS BOARD OF DIRECTORS AUTHORIZING THE INDIVIDUALS SIGNING THE APPLICATION TO EXECUTE THIS CONSTRUCTION PERMIT APPLICATION AND TO CAUSE OR ALLOW THE CONSTRUCTION, MODIFICATION AND OPERATION OF THE EQUIPMENT TO BE COVERED BY THE PERMIT.

THIS PERMIT APPLICATION CONSISTS OF APPLICATION FORMS AND OTHER EXHIBITS LISTED BY TITLE AND NUMBER OF PAGES BELOW.

APC-63 - 3 pages
APC-61 - 6 pages
A -104 - 1 page
Addendum - 1 page
Test Report - 16 pages

FOR OFFICIAL USE ONLY

PERMIT APPLICATION NO. 5

GENERAL INFORMATION

NOTE: APPLICANT MUST SUBMIT TWO COPIES (THREE IF LOCATED IN COOK COUNTY) OF EACH OF THE FOLLOWING:

1. CONSTRUCTION PERMIT APPLICATION FORM (SEPARATE APPLICATION FORM FOR EACH EMISSION SOURCE NOT COVERED BY AN ATTACHED ADDENDUM).
2. DIMENSIONED DRAWINGS, PLAN, ELEVATION (SECTIONED WHERE NECESSARY AND WHERE APPLICABLE), PLOT PLAN AND MAP SHOWING DISTANCES TO NEAREST BOUNDARY OF THE PROPERTY ON WHICH THE EMISSION SOURCE IS LOCATED AND THE DISTANCES TO NEAREST RESIDENCES, LODGINGS, NURSING HOMES, HOSPITALS, SCHOOLS AND COMMERCIAL AND MANUFACTURING ESTABLISHMENTS.
3. FLOW DIAGRAM AS SPECIFIED IN THE INSTRUCTION SHEET.

14. NAME OF PROCESS: Pyrotechnic Destruction	15. NAME OF EMISSION SOURCE EQUIPMENT: Pyrotechnic Destruction
16. EMISSION SOURCE EQUIPMENT MANUFACTURER: O.B. Examples of Phoenix, Inc.	17. MODEL NUMBER: N/A / 18. SERIAL NUMBER: N/A
19. NUMBER OF IDENTICAL EMISSION SOURCES:	20. TYPE PROCESS: ☐ CONTINUOUS ☑ BATCH
21. PROCESS WEIGHT RATE: 500 (max.) LB/HR	22. BATCH RATE: ____ BATCH/HR (max.) 500 LB/HR

23. COMPOSITION OF RAW MATERIALS USED IN THE PROCESS AND PERCENT OF EACH BY WEIGHT (COMMON NAME SHOULD BE GIVEN IF CHEMICAL NAME IS UNKNOWN):

a. Pyrotechnic Waste (see below) 75/80%
Charcoal 20/25%
b. Solid Propellant Waste(see below) 75/80%
Charcoal 20/25%

24. NAME OF PRODUCTS MANUFACTURED:	MAXIMUM PRODUCTION RATE FOR EACH PRODUCT:	ESTIMATED AVERAGE PRODUCTION RATE OF EACH PRODUCT:
a. N/A	b. N/A LB/HR	c. N/A LB/HR
d.	e. LB/HR	f. LB/HR
g.	h. LB/HR	i. LB/HR

25. WASTE MATERIALS FROM MANUFACTURING PROCESS:	MAXIMUM AMOUNT OF WASTE MATERIALS PRODUCED.	ESTIMATED AVERAGE AMOUNT OF WASTE MATERIALS PRODUCED.
a. 15% Sodium Oxide 85% Magnesium Oxide	b. 400 LB/HR	c. 300 LB/HR
d.	e. LB/HR	f. LB/HR
g.	h. LB/HR	i. LB/HR

26. AVERAGE OPERATION TIME OF EMISSION SOURCE: 8 HRS/DAY 5 DAYS/WK 52 WKS/YR

27. PERCENT OF ANNUAL THROUGHPUT: DEC/FEB 25 % MAR/MAY 25 % JUNE/AUG 25 % SEP/NOV 25 %

3 (Continued)

a. Pyrotechnic Waste
58% Magnesium Powder
37% Sodium Nitrate
5% Organic Binder
plus sufficient #2 fuel oil to wet waste for safety reasons

b. Solid Propellant Waste
75% Ammonium Nitrate
15% Synthetic Rubber
10% Various Organic Chemicals